RESEARCH ARTICLE

Introduction of subcutaneous depot medroxyprogesterone acetate through use of community-based distributors in Zambia [version 1; peer review: 2 approved with reservations, 1 not approved]

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3United States Agency for International Development, Lusaka, Zambia
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Abstract

Background: The majority of women in Sub-Saharan countries including Zambia use intramuscular Depot Medroxyprogesterone Acetate (DMPA IM) as their preferred method of contraception. However, nearly one-third of the women who start on DMPA IM discontinue within 12 months due to access barriers. Sayana® Press, low-dose, prefilled subcutaneous depot medroxyprogesterone acetate (DMPA-SC), suitable for even lower-level healthcare providers and potential for self-injection administration, has been developed. This pilot aimed to understand the feasibility of DMPA-SC in Zambia through use of community-based distributors (CBDs).

Methods: The pilot was implemented from May 2017 to July 2017 in 29 public health facilities in three districts. A total of 161 CBDs received a comprehensive training in DMPA-SC, which included counselling about the method, potential side effects, correct administration and waste management. Post-training mentorship and supervision was conducted. Routine client level data was collected through Ministry of Health management information system.

Results: During the pilot, 12,818 clients were provided with modern voluntary FP methods, with 16.4% (2,100) opting for DMPA-SC. The age range of clients opting for DMPA-SC was between 15 and 50 years, with an average of 31 years. Slightly less than half (43%) of DMPA-SC clients were adolescents and young women, with 11% aged 15–19 and 32% aged 20–24. No adverse events were reported during or immediately subsequent to the introduction of DMPA-SC administration by CBDs.

Conclusion: The pilot demonstrated that CBDs can safely provide...
DMPA-SC at the community level with appropriate public sector coordination and oversight.

**Keywords**
Feasibility, Introduction, Distribution, DMPA-SC, Community level, Zambia

This article is included in the [International Conference on Family Planning gateway](https://www.familyplanningconference.org/).
**Introduction**

Over the last decade, the modern contraceptive prevalence rate (mCPR) in Zambia has increased from 25% to 45%. Despite this increase, unmet need for family planning (FP) stands at 21%. Like other Sub-Saharan countries, contraceptive injectables are the most widely used modern method among currently married women in Zambia. However, nearly one-third of the women who start on contraceptive injectables discontinue within the first year of use, partly due to access barriers such as long distances between a woman’s home and a health facility. In response to the aforementioned, Zambia Ministry of Health (MoH) introduced community-based distribution of short-term FP methods, including administering of contraceptive injectables by community-based distributors (CBDs).

Subcutaneous depot medroxyprogesterone acetate (DMPA-SC), brand name Sayana® Press, is a contraceptive injectable that uses a combination of low-dose DMPA in a pre-filled Uniject® system that eliminates preparation of needle and syringe. With its unique Uniject® feature, DMPA-SC can be easily transported and safely administered by lower-level healthcare providers, including community health workers, and even self-administered by women themselves; thus, it may increase access to contraceptive injectables and improve method continuation, and ultimately address unmet need for FP. Evidence has shown that DMPA-SC is safe, acceptable and feasible in low- and middle-income country (LMIC) settings.

In 2017, Society for Family Health – Zambia (SFH) a non-governmental organization in partnership with Zambia MoH, Population Services International (PSI), ChildFund International and Development Aid from People to People (DAPP), conducted a pilot introduction of DMPA-SC in Zambia. This pilot was part of a five-year (2015–2020) United States Agency for International Development (USAID)-funded project titled Sexual and Reproductive Health for All Initiative (SARAI). The pilot aimed at understanding the feasibility of introduction of DMPA-SC in the community through use of CBDs.

**Methods**

**Ethics statement**

Ethics approval (REF No. 006-12-13) was received from University of Zambia Biomedical Research Ethics Committee (UNZAREC) to analyze routine client-level data on reproductive health. The ethics committee waived the need for participant consent.

**Pilot description**

The pilot was conducted from May 2017 to July 2017 in 29 SARAI-supported public health facilities across three districts (Kalulushi, Mafinga and Kawambwa). Voluntary FP services are routinely offered with established and having established community-based distribution programs in which CBDs provided intramuscular DMPA (DMPA-IM), oral pills and condoms.

In Zambia, CBDs are not authorized to provide FP services to new users. CBDs refer new FP users to nearest health facility for medical assessment and subsequent commencement of services. CBDs are only authorized to attend to returning clients.

**Sample selection**

The pilot was implemented only in “model facilities” under SARAI. The project defined a model facility as one that encompasses the key components and systems needed at the community level to respond effectively to the FP needs of the population. These systems must include, skilled service providers; expanded method mix; client-centered care offering age appropriate information, outreach to vulnerable populations; supervision; mentoring for health care providers; youth and adolescent reproductive health services; community involvement and data collection and analysis to track progress. All CBDs (n=163) in all model public health facilities (n=29) supported by SARAI were selected to participate in the pilot.

**Training**

A cascaded training approach was implemented which allowed introduction of DMPA-SC at all levels of the health system. In November 2016, prior to the pilot a 3-day training session for 25 national-level master trainers drawn from all 10 provinces of Zambia was conducted. DMPA-SC master trainers were engaged to train 35 CBD supervisors drawn from three pilot implementing districts namely Kalulushi (13 supervisors), Kawambwa (12 supervisors) and Mafinga (10 supervisors). These supervisors included MoH health facility-based CBD supervisors and district-level supervisors with the following roles:

i. Post-training supervision to ensure CBDs attain proficiency
ii. Ensure CBDs adhere to injection safety standards
iii. Facilitate accurate data management and record keeping
iv. Commodity stock management
v. Monitoring and management of adverse events

There was 3 days of training for 163 CBDs from implementing facilities, representing an average of five CBDs per facility, conducted.

**Post-training mentorship and supervision**

Each CBD was attached to a health facility, where he/she was to provide at least five DMPA-SC injections under supervision before being allowed to practice in the community. The standard MoH injection supervision checklist was used to assess CBD competency in injection safety. Supervisors also conducted regular field-level supervision, which focused on data management and safe disposal of clinical waste.

**Stock management**

Stock consumption data from the three months (February-April 2017) that preceded the pilot showed that on average each CBD administered 10 doses of DMPA-IM per month. Therefore, each CBD was given 10 doses of DMPA-SC following training. In order to avoid commodity stock out,
each facility was given 30 doses as buffer stock. All CBDs were advised to re-order once 50% of stock on hand was used up. In addition, all CBDs were supplied with stock-tracking forms and were given lockable wooden boxes for storing commodities. A total of 6,530 DMPA-SC doses were given to implementing districts.

Waste management
All trained CBDs were provided with supplies for waste management, including sharps boxes, buckets and bin liners. In line with MOH policy, CBDs ferried all waste generated during service provision to the nearest health facility for final disposal once the bin liners were 75% full.

Adverse event (AE) management
The pilot developed a framework for identifying, monitoring and reporting of AE’s. CBDs received training to identify, analyze and classify AEs in terms of nature and cause. A referral system was established between the CBDs and the nearest health facility to link clients with suspected AEs.

Data collection and analysis
CBDs captured client level data on clients receiving DMPA-SC doses using standard MoH registers, which had been adapted to include DMPA-SC as a new FP method. Demographic (i.e., age) and service information (i.e., client type and switching behaviours) for clients that voluntarily opted for reproductive health services, particularly DMPA-SC, was extracted from the registers and entered into Microsoft Excel software. The study used de-identified data for analysis that is part of routine data collection for which IRB approval was obtained. Data analysis involving generating of descriptive statistics through tables, graphs cross-tabulations and frequencies was conducted using Statistical Package for Social Sciences (SPSS) version 21.

Results
Of the 163 CBDs, 161 successfully completed the training; two CBDs discontinued due to personal reasons.

CBD characteristics
All the CBDs trained had previous training in FP counseling, distribution of oral pills and condoms and administration of DMPA-IM. Below are the characteristics of the CBDs. Characteristics of CBDs that completed training are shown in Table 1.

FP Provision during pilot period
A total of 12,818 clients were provided with FP methods/products during the pilot period as shown in Figure 1.

The majority of the clients (37%) were provided with male condoms while combined oral contraceptives at 5% accounted for the least method provided. DMPA-SC clients accounted for 16% of all the clients seen during the pilot period. Overall, clients that received injectable contraceptives (i.e., DMPA IM & SC) accounted for nearly half (i.e. 48%) of all the clients provided with FP methods/products during the pilot period.

Table 1. Community-based distributor (CBD) characteristics.

<table>
<thead>
<tr>
<th>Variable</th>
<th>CBDs, N*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total trained in DMPA-SC</td>
<td>161</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>66</td>
</tr>
<tr>
<td>Female</td>
<td>95</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>21</td>
</tr>
<tr>
<td>Secondary</td>
<td>140</td>
</tr>
<tr>
<td>Average age, years</td>
<td>35</td>
</tr>
<tr>
<td>Previous trained in DMPA-IM</td>
<td>161</td>
</tr>
</tbody>
</table>

*Unless indicated. DMPA-IM, intramuscular depot medroxyprogesterone acetate.

Pilot results showed a 17% increase in the number of injectable DMPA doses given after the introduction of DMPA-SC pilot. Table 2 below compares FP provision before and after DMPA-SC introduction.

Before the DMPA-SC pilot was introduced, each CBD gave an average of 11 doses of injectable DMPA-IM per month. After the DMPA-SC pilot was introduced, each CBD gave an average of 13 doses of injectable DMPA per month (i.e., DMPA-SC=5, DMPA IM=8).

DMPA-SC doses as a proportion to DMPA IM doses
A total of 6,190 injectable contraceptives were provided during the pilot period. DMPA-SC accounted for 34% (i.e., 2,100 DMPA-SC doses) of the total injectable contraceptives administered. Figure 2 below shows DMPA-SC doses provided as a proportion of total injectable contraceptives.

DMPA-SC clients by age distribution
Nearly half (43%) of the DMPA-SC clients were adolescents and young women below the age of 25. Figure 3 shows DMPA clients by age distribution.
Table 2. Family planning provision before and after subcutaneous depot medroxyprogesterone acetate (DMPA-SC) introduction.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Prior to pilot (3 months)</th>
<th>Pilot period (3 months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMPA-SC doses</td>
<td>N/A</td>
<td>2,100</td>
</tr>
<tr>
<td>DMPA-IM doses</td>
<td>5,284</td>
<td>4,090</td>
</tr>
<tr>
<td>Total DMPA-IM doses</td>
<td>5,284</td>
<td>6,190</td>
</tr>
<tr>
<td># of CBDs</td>
<td>163</td>
<td>161</td>
</tr>
<tr>
<td>Avg. DMPA doses/3 months</td>
<td>32</td>
<td>38</td>
</tr>
<tr>
<td>Avg. DMPA doses/month</td>
<td>11</td>
<td>13</td>
</tr>
</tbody>
</table>

DMPA-IM, intramuscular DMMA; CBD, community-based distributor.

**Figure 2.** Subcutaneous depot medroxyprogesterone acetate (DMPA-SC) as a proportion of total injectable contraceptives (N = 6,190). IM, intramuscular.

**Figure 3.** Subcutaneous depot medroxyprogesterone acetate (DMPA-SC) clients by age distribution (N=2,100).

**Figure 4.** Proportion of family planning (FP) clients that switch to Subcutaneous depot medroxyprogesterone acetate (DMPA-SC) (N=2,043). IM, intramuscular.

AE management

A robust AE reporting system was established in all 29 implementing facilities. Routine monitoring data revealed that no AEs were reported following DMPA-SC administration at all service delivery sites.

**Discussion**

These findings provided useful insights to inform development of the national road map for the national scale-up of DMPA-SC in Zambia. This is the first study in Zambia to explore introduction of DMPA-SC in the community through use of CBDs. Trained CBDs were able to safely administer, appropriately store and dispose of DMPA-SC.

Similar to other DMPA-SC pilots conducted in Niger, Senegal and Uganda, this pilot revealed that nearly half DMPA-SC doses were administered to women younger than 25 years of age. Each CBD gave five doses of DMPA-SC doses per month on average. The pilot performed relatively better than similar pilot in other countries (Senegal, Niger and Uganda), where each provider administered three doses per month. Therefore, it is evident that DMPA-SC has the potential to reduce unmet need among women especially the adolescents thereby reducing unintended pregnancies. Despite DMPA-SC being only available in the community, some facility-based CBD supervisors/FP providers in a few facilities included the method during FP counselling. Hence, new FP users who opted for DMPA-SC were referred to CBDs after clinical assessment. Due to differences in policies on FP service provision by CBDs, this finding contradicted with pilot results from other countries that showed a substantial number of women using modern family planning for the first time (“new users”) choosing DMPA-SC.
Conclusion
The DMPA-SC Pilot demonstrated that CBDs can safely provide DMPA-SC within the existing family planning method mix. Secondly, the pilot demonstrated that DMPA-SC has potential to reach underserved populations such as adolescent and young women.

Data availability

Underlying data are available in file Dataset.zip, which contains the following data:
- DMPA SC aggregated dataset.xlsx (aggregated data from all locations).
- KALULUSHI data.xlsx (underlying data from Kalulushi).
- KAWAMBWA data.xlsx (underlying data from Kawambwa).
- MAFINGA data (underlying data from Mafinga).

Data are available under the terms of the Creative Commons Zero “No rights reserved” data waiver (CC0 1.0 Public domain dedication).

Grant information
This study was funded by the United States Agency for International Development (USAID) under the terms of Award No. AID-611-A-15-00001 (Sexual and Reproductive Health for All Initiative - SARAI). The opinions expressed herein are those of the author(s) and do not necessarily reflect the views of USAID. Publication of this study was sponsored by The Bill and Melinda Gates Foundation (Investment ID: OPP1181398).

The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

References
4. Pfizer’s Sayana® Press becomes first injectable contraceptive in the United Kingdom available for administration by self-injection. 2015; [accessed 04.29.19]. Reference Source
Open Peer Review


Version 1

Reviewer Report 27 September 2019

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Jenny Liu
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I am pleased to see more information about the CBD pilot that was done in Zambia. It is highly important that these findings be shared more publicly and widely, contributing to the growing knowledge base surrounding DMPA-SC introduction. That being said, this article would benefit from more clearly articulating and detailing the Zambian experience in several ways. Furthermore, the main conclusions stated in the discussion session are not directly supported by the results. Specific suggestions are listed below:

Background:
- More information is needed about how CBDs conduct their community-based activities and identify clients in need. Where/how did they find the 12,808 clients served?

Methods:
- Is the participant consent (that was waived) referring to the participating CBDs? Please clarify.
- Was there a particular reason why the 3 districts were chosen for the pilot?
- What are the qualifications/training to become a CBD? Is this cadre of health worker considered volunteers or formal employees of the public health system? What are their regular duties?
- Who were the master trainers? What were their qualifications?
- What does the standard MOH injection supervision checklist look for? Did this need to be adapted for DMPA-SC?
- How regular were the supervisory field visits?
- Did CBDs also provide DMPA-IM in communities prior to the pilot? It seems to suggest so, but it would be helpful to state explicitly.
- Each CBD was given 10 doses of DMPA-SC per month? Or just initially after training?
- How was the data on the characteristics of the CBDs collected? This is not described anywhere despite the data being shown in the results.

Results:
- Do the clients served include both men and women? Please clarify. If so, method distribution by gender would be useful to understand method choice of DMPA-SC among the other options.
• How were “revisits” identified? Is this determined by the provider or the client? Does this only pertain to methods available at facilities (as opposed to traditional methods, for example)? Similarly, what is the definition of a “new acceptor” and how are they identified? Were these definitions consistently applied?

• Related to the above, why are there 3% of newly accepting clients? Weren’t CBDs only allowed to service returning FP clients? What explains this discrepancy?

• The subheading and text describing Figure 5 is confusing. What is the denominator? It seems to be anyone switching from another method to DMPA-SC and not necessarily FP clients who are revisits, but this isn’t what is conveyed in the text.

Discussion:
• Based on the data shown, I don’t think you can conclude that “CBDs were able to safely administer, appropriately store, and dispose of DMPA-SC.” You did not show any information on measures of safety; lack of AE reports does not necessarily reflect the safety of administration, but rather the safety of the drug itself. How did you know that the products were appropriately stored? What data do you have to show that storage was proper? That disposal was also proper? What monitoring was done to check that CBDs were following instructions? Is this from the supervisory visits? If so, then the data from those visits should be reported.

• Be careful about use of overly general language, such as “performed better.” It is not clear that administering higher numbers of doses per month reflects “better” performance. Does this truly reflect better service delivery? Reach? Coverage? Or more efficient service provision? Or simply poorer quality services to more people?

• How did you conclude that DMPA-SC has “the potential to reduce unmet need?” Since CBDs can only attend to returning clients, then this doesn’t seem to be a case where the contraceptive user base is being expanded. You also did not disaggregate client type by age, so it’s not clear how you can conclude that unmet need among adolescents is “especially” addressed.

Other:
• The dataset for the CBD characteristics is not provided.

Is the work clearly and accurately presented and does it cite the current literature?
Partly

Is the study design appropriate and is the work technically sound?
Partly

Are sufficient details of methods and analysis provided to allow replication by others?
No

If applicable, is the statistical analysis and its interpretation appropriate?
Partly

Are all the source data underlying the results available to ensure full reproducibility?
No

Are the conclusions drawn adequately supported by the results?
No

Competing Interests: No competing interests were disclosed.
**Reviewer Expertise:** Contraceptives, DMPA-SC, adolescent health, sexual and reproductive health, health services delivery, behavioral economics

I confirm that I have read this submission and believe that I have an appropriate level of expertise to state that I do not consider it to be of an acceptable scientific standard, for reasons outlined above.

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**General appreciation:**
While this paper contributes to the growing body of evidence regarding the feasibility and acceptability of introducing the provision of DMPA-SC at the community-level in Sub-Saharan Africa, by adding a new country (Zambia) to the list of environment where this strategy has been piloted to improve access to and use of family planning services, major revisions are required before it is suitable for indexing.

Overall, the manuscript does not satisfactorily address its stated goal of evaluating the “feasibility” of introducing DMPA-SC at the community level. This stems partly from the fact that the research design is different from previous pilots exploring the same research questions, which included primary data collection (including systematic interviews of both DMPA-SC clients and CBDs, plus focus group discussions or / and in-depth interviews with key stakeholders). The research presented here only engages with routine service statistics and this creates limitations in the scope and validity of the findings which should be directly addressed in the manuscript. This is not to say that only pilots using primary data collection should be presented, however the authors need to be realistic in presenting what the available datasets can and cannot contribute to the existing body of evidence on the introduction of DMPA-SC for provision by community-based distributors.

**Introduction:**
- Figures and percentages cited would benefit from scientifically recognized sources such as DHS and/or other population-based surveys.
- Reference (4) in the first paragraph seems incorrect (not addressing barriers to access in Zambia).
- Additionally, regarding ref (4), there is at this point enough literature on the introduction of DMPA-SC at the community level in Sub-Saharan Africa for the authors to engage directly with this corpus, rather than experiences conducted in Europe.
- In general, the Introduction needs to engage with methods and findings from the aforementioned corpus and position the presented research accordingly. Feasibility of introducing DMPA-SC at the
community level is now fairly well established in multiple low-income environments, so it is important for the authors to clarify what their research add to the existing body of research for future developments of the model.

- How exactly is “feasibility” going to be measured? According to which criteria?

**Methods:**
- First paragraph under “Pilot description” is very unclear (“with established and having established”?)
- Authors need to detail the CBD profiles before the beginning of the pilot: are they volunteers? Do they have any clinical background or training prior to the start of the pilot?
- Description of “model facilities” is confusing, explain how this was a “community-based distribution” model: where did the CBD operate? Did they work alone or in groups? Door-to-door or during community events? Multiple models of CBD exist in SSA (including some where CBD operate in the courtyard of health facilities) so this section needs to give more details as to what CBD operating in Zambia are specifically capable of doing/allowed to do.
- In addition, the fact that these CBD came from “model facilities” creates a bias in the generalizability of the findings that should be addressed in the Discussion section.
- How reliable are routine statistics (stock management and service data) in Zambia? Was special attention paid to data collection and reporting under the pilot? In that case, any comparison with pre-pilot routine statistics may be flawed due to over/under-reporting.
- Adverse event: the authors need to explain what counts as “adverse events” (side-effects from using the method? Allergic reaction? Pregnancy?) While severe adverse events have rarely been recorded during DMPA-SC introduction pilot in DRC, side-effects are a key reason for methods discontinuation and should be discussed in this manuscript as CBD are often poorly trained in side-effect explanation and management.

**Results:**
- The first statement is incorrect (and 17% does not match the 16% indicated on Figure 1). The methodology used cannot measure an “increase in the share of DMPA injectable users” since available data does not include method substitution.
- This is a recurring issue with the findings of this article. Table 2, for example, suggests that they may have been at least some substitution between DMPA-IM and DMPA-SC but the authors never discuss this point.
- Delete repetition of “Figure 2 below…”
- The analysis of age distribution would have been more interesting in terms of changes recorded in method distribution among different age groups after the introduction of DMPA-SC.
- We suggest deleting Figure 2 since the graph does not add relevant information that is not already included in the text.
• The analysis of “New” vs “Re-visit” acceptors needs to be presented in the Methods section.

• How reliable is the “New Acceptors” indicators? Routine statistics analysis conducted in other countries (See for example Track20 initiative) suggest that it is poorly recorded (“new” meaning “new to DMPA-SC”, “new to injectable”, “new to this facility”, “new to modern contraceptives” more or less interchangeably).

• Again, define AE, what level of severity would have justified recording as “AE”?

Discussion:
• Since CBD in Zambia apparently already provided DMPA-IM, the authors need to explain what could be the added-value of introducing DMPA-SC in the range of methods they provide.

• What was the distribution of methods by age group prior to the introduction of DMPA-SC? Are there other factors (in the pilot or in the study design) that may explain the high proportion of youth clients?

• Since “new acceptors” only represent 3% of all recorded clients (of that number is reliable) and method distribution strongly suggest some method switching/substitution, the authors need to better explain how the introduction of DMPA-SC at the community level might reduce unmet need? The data presented here is insufficient to support that claim.

• The comparison with results from studies conducted in other countries needs to be nuanced. None of the study mentioned measured “feasibility” exclusively in terms of volume of DMPA-SC provided at the community level (and a “better” performance of 5 vs 3 doses per month in the highly controlled environment of a pilot project seems hardly significant).

• The methodology used in Senegal, Niger and Uganda (and several other countries not mentioned in the paper) and the findings were more complex than suggested here and deserve to be fully engaged when comparing to results presented in this manuscript.

Conclusion:
• How was “safely” measured (absence of AE?). This is never discussed in the manuscript.

• The second sentence (on potential to reach underserved population) is not adequately supported by findings from the manuscript.

Writing and figures:
• We suggest using an English editor to review the manuscript for typos, as well as reword some sentences/paragraphs.

• Review the manuscript to avoid use of passive voice as much as possible.

• We believe the wording should be “injectable contraceptives” and not “contraceptive injectables”.

• Reword: “de-identified data for analysis that is part of the routine data collection for which IRB approval was obtained.”

Is the work clearly and accurately presented and does it cite the current literature?
Partly

Is the study design appropriate and is the work technically sound?
No

Are sufficient details of methods and analysis provided to allow replication by others?
Partly

If applicable, is the statistical analysis and its interpretation appropriate?
Partly

Are all the source data underlying the results available to ensure full reproducibility?
Yes

Are the conclusions drawn adequately supported by the results?
Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Sexual and Reproductive Health in Sub-Saharan Africa

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Reviewer Report 29 July 2019
https://doi.org/10.21956/gatesopenres.14128.r27379

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Anthony K. Mbonye
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The study aimed to assess the feasibility of introduction of subcutaneous depot medroxyprogesterone acetate through use of community-based distributors in Zambia.

The design should have included key informant interviews and Focus Group Discussions to assess acceptability and sustainably of this intervention.

How were the views of clients assessed? This was important for the sustainability of the intervention
How were the views of providers assessed? This was also important for the sustainability of the intervention

Did clients wish to continue with the method? If yes why? If no why?
These data would have provided insights in the sustainability of the intervention.
Is the work clearly and accurately presented and does it cite the current literature?
Yes

Is the study design appropriate and is the work technically sound?
Partly

Are sufficient details of methods and analysis provided to allow replication by others?
Yes

If applicable, is the statistical analysis and its interpretation appropriate?
Yes

Are all the source data underlying the results available to ensure full reproducibility?
Yes

Are the conclusions drawn adequately supported by the results?
Partly

**Competing Interests:** No competing interests were disclosed.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.